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EXAMINER

KNAUSS, SCOTT A

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/936,951

Applicant(s)

ROBERT ET AL.

Examiner

Scott A Knauss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 15, 16, 21, 22 and 24-28 is/are rejected.
- 7) ☒ Claim(s) 17-20, 22, 23, and 29-32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Applicati n Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references cited in the information disclosure statement have been considered by the examiner.

Claim Objections

3. Claim 17-20,22,23 and 29 are objected to because of the following informalities. Appropriate correction is required.

The use of the word "type" in claims 17-20 is objected to because it is not clear what is encompassed by the word "type"

The use of the word "preferably" in claims 22 and 23 is objected to because it is unclear if the limitations following the word "preferably" are part of the claimed invention.

The word "they" in line 17 of claim 29 is objected to because it is not clear what "they" refers to. The examiner recommends replacing "they" with "the laser diodes"

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,367,593 (Lebby et al).

Regarding claim 15, Lebby discloses an optoelectronic connector in fig. 3 comprising:

A package #27;

An optical port #32;

An electrical port #40

An optoelectronic circuit positioned in the package and connected to both ports, which includes emission (lasers, light emitting diodes, etc.) and detection (photodetectors, photodiodes) circuit chips #45 (see column 5, lines 20-24), and also IC chip #150

An internal wall of the package being provided with metallized connections (see fig. 4), pads of the integrated circuit being connected directly to the metallized connections (see column 3, lines 29-31)

Lebby does not, however, explicitly disclose a "bare control" chip. Nevertheless, Lebby does disclose the use of IC chip #50, and discloses that emission-detection elements #45 may be connected directly to the IC chip and even be formed directly on the IC chip (see column 4, lines 40-43).

Although Lebby does not explicitly specify using the IC chip to *control* the emission-detection elements, such an arrangement is well known in the art, for example, to amplify optical signals received using amplifier circuitry on an IC chip, and to drive optical transmitting elements via the IC chip

Therefore it would have been obvious to one of ordinary skill in the art to modify the optoelectronic connector of Lebby to use amplifier or driver circuitry on the IC chip #50 in order to drive optical transmitters or amplify optical signals received via the IC chip, and thus control the emission detection elements. Furthermore, since the IC chip of Lebby is not placed in a package of its own, the examiner considers it to be a "bare" control circuit.

Regarding claims 15 and 16, the applicant is claiming the product including the process of making an optoelectronic package, and therefore are of "product-by-process" nature. The courts have been holding for quite some time that: the determination of the patentability of product-process claim is based on the product itself rather than on the process by which the product is made. In re Thrope, 777 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985); and patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. Applicant has chosen to claim the invention in the

product form. Thus, a prior art product which possesses the claimed product characteristics can anticipate or render obvious the claimed subject matter regardless of the manner in which it is fabricated. A rejection based on 35 U.S.C. section 102 or alternatively on 35 U.S.C. section 103 of the status is eminently fair and acceptable. In re Brown and Saffer, 173 USPQ 685 and 688; In re Pilkington, 162 USPQ 147.

As such, no weight is given to the process steps recited in claims 15 and 16

Regarding claim 16, in order to couple light between laser diode and optical fiber terminations #47, the spacing between the diodes would inherently need to be the same as the spacing between the fibers.

Regarding claim 21, as stated above, Leiby discloses pads of the integrated circuit being connected directly to the metallized connections (see column 3, lines 29-32)

Regarding claim 22, Leiby discloses the use of vertical cavity surface emitting lasers (VCSEL's), (see column 3, lines 7-8)

Regarding claim 24, Leiby discloses an optical port having a part (hole #35) for positioning optical fiber terminations #47, this part abutting what can be considered a "cant" (edge #34).

Regarding claim 25, Leiby does not disclose the connector being limited access with two optical channels or the electrical port having contacts for electrical signals and contacts for a ground signal.

Nevertheless, connectors having only two optical channels are known in the art in order to provide a transmitter/receiver function, and it is well known in the art to

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provide integrated circuits with both electrical and ground signals to connect to external circuitry, and thus it would have been obvious to one of ordinary skill in the art to modify the connector as set forth in claim 1 to have only two optical channels and to provide ground and electrical signals to the integrated circuit, in order to provide a connector having a transmitter and receiver function, and to electrically connect the integrated circuit to external circuitry.

Regarding claim 26, the flat rectangular shape of the connector of Lebby would enable it to be stacked on another such connector.

Regarding claim 27, Lebby discloses that photonic elements, including laser diodes, may be mounted directly to the integrated circuit (see column 3, lines 6-10, column 4, lines 47-49), but does not disclose how the photonic elements are connected to the integrated circuit, in particular, whether pads of the laser diodes are connected by connection wires directly to pads of the integrated circuit. Nevertheless, such connection methods are known in the art, and it would have been obvious to one of ordinary skill in the art to use known connection means to connect the photonic elements to the integrated circuit.

Regarding claim 28, Lebby discloses the use of light receiving and light emitting elements (column 3, lines 6-10) which carry out a conversion of signals available at the optical port into signals available at the electrical port, and vice versa.

Allowable Subject Matter

7. Claims 17-20 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims, and rewritten to overcome the informalities set forth in the objection above.

Regarding claim 17 in particular, while the prior art, in particular Lebby et al, discloses a package which might be considered to be a MID "type" package, the prior art fails to teach or suggest modifying the connector of Lebby such that contact armorings are formed by connection metallizations.

Regarding claim 23, the prior art fails to teach or suggest modifying the connector of Lebby such that the optical port comprises an inclined mirror.

8. Claim 29-32 would be allowable if rewritten to correct the informalities noted above. The prior art fails to disclose a method of making a connector with all the limitations as discussed above regarding claim 1, comprising the steps of laying laser diodes on a GaAs substrate, depositing them on an intermediate support, turning the support over to face an integrated circuit, and the laser diode being transferred on the integrated circuit.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,291,572 (Blonder et al) discloses another optical transmitter having metallized connections.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

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sak
April 21, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER